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Role of play in social skills and intelligence of children

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Abstract

Need to play in the living of children is accounted as their deepest and most fundamental natures that can be considered same as its physical needs. According to Mariana Monteh Souri, Italian trainer in the field of education and training, one can nurture and promote the self- confidence of a healthy personality and self- training by playing. She also believes that ethical and social disadvantages of children may be removed or reduced by play and bases for loving the job and social activity will be stabilized by playing. This study aims to investigate the role of play in development of social skills of children in three groups, kindergarten (3- 5 years old), pre-school (6-7 years), and school (8 - 12 years). The sample size of this study was 720 pupils obtained using stratified random sampling from 5 districts of Teheran. According to the subject of this study, besides type of play, with type of toys and time of play, this study investigated the development of social skills of children focusing on two factors, intelligence profile and social skill and its data analyzed using MANOVA Two Way analysis of variance statistical model. The test of hypotheses indicated that there is significant difference between dependent variables, “social skill” focusing on the group (kindergarten, pre-school and school); and finally by comparing the results of this study with related history in and out of country, it has been concluded that play, play therapy and even type of toy will increase the social skills of children.

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Introduction

As the flowers of living garden, children who enjoy increased daintiness and known as people who make the future, are like delicate creatures and influenced by their environment. Such creatures are easily influenced and like a white board reflect the reactions of other people and adults in their behaviors. Training and educating such children enjoys increased sensitivity and must be conducted based on their needs. In cases when their training plans and recreations has not been implemented based on their course of growth, there will be made more complications in the mental health of children resulting in behavioral disorders (Lotfabadi, 1995).

Play is the main factor for mental development of child and is one of the factors influenced on the nurture of forces and talents of child. The main core of children plays forms seeking for his surrounding world and of course in his mind, any experience, even throwing the objects surrounding him is valuable. In types of plays, child shows its imagination and find an opportunity for indicating his feelings and in all cases dealing with creativeness and experiences the joy of creation. Joyful, movable and attractive plays considerably reduce the stress and even exercise, if conducted by a cheerful style will promote the feeling of progress.

In the view of psychologists, game plays important role in the mental development of children and this can be more considered in mass plays. Children plays are different based on their gender, age, gusto and financial and

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cultural possibilities of any child; therefore, occasionally child might interest to a specific play and this game may not be tolerated financially by families. Therefore, one may not monotonously recommend special plays for children. Play for children is like working for adults and like working that developing the adults, play will also cause children to learn adapting to each other, transaction, claiming, getting the own right, and even losing other's right and make it ready for effective social communication and for entering to the world of adults.

Play

Beginning the play can be attributed to the far pasts, even from the onset of human appearance. In fact, play is a part of man's living from the beginning of birth to the death. There are different answers to this question that what the root of play is. Some people believe it has root in the nature and instinct and account it as the most important factor developing the man. Some others consider it as repeat of tests of past generations and believe that child passes unconsciously such stages and correlate it with genetic aspects of behavior. Some people account it as an acquired case and consider it as a kind of perception from interactions of such material world that child undergoes it to saber rattling and growth and becomes independent. Some other group consider the play as a mirror of wishes and childhood dreams and finally some others mentioned the root of play as density of forces in the child and believe that its goal is reducing and consuming the related force and he attempt to become tired and consumes the additional energy resulted from digesting the food (Mahjoor, 1993).

Comparing with what mostly imagined, play is not an invaluable activity only for killing the time; indeed, as indicated by Mary Mondares: "play for child is equal with speaking for an adult, play and toys are the words of children". Play for child is a way for making the social communication, a way for solving the problems, a possibility for development of fancy and creativeness and a method for reducing the anxiety; because play is itself a kind of defending mechanism (Arya, 2008). A child who plays enough and freely, is cheer, he can learn more experiences and attains more development in the thought and general growth (Arya, 2008).

Play contains extended facets; therefore, there are more definition for it. Any of such definitions indicate special view by distinguishing a facet of play.

In Webster Dictionary, play defined as below:

- a- Movement and activity like movement of muscles;
- b- Freedom or a range for movement;
- c- Activity or exercise for recreation, amusement or sports;

Piaje believes that for one can call an activity as a play, it must come with following conditions:

- 1- Play has an objective hidden in it;
- 2- Play is voluntary not compulsory;
- 3- Play is pleasant and palatable;
- 4- Play lacks any organization;
- 5- Play is free from any conflict and protest (Miski, 2005).

More factors influence on the type and method of plays such as age, gender, social and economical situation, culture, etc..., play is also effective in the future of man and give a new form and color to different mental, emotional, motivational, intellectual aspects and imagination development as well as drawing the self- dreaming and ideal of man.

Method

The population of this study comprises all children of kindergarten (3-5 years old) and pre-school students (6-7 years old) and school students (8- 12 years old) located in the schools of Tehran.

Stressing on determining the size of sample, considering the descriptive hypothesis, the number of 720 children and students of pre-school and school students were chosen as sample size selected using stratified random sampling. Following table indicates the layers of population.

Table 1-3- sampling units and sample size

Sampling units	School	Pre-school	Kindergarten
Geographical regions			
North (district 1)	2 units (48 people)	2 units (48 people)	1 unit (48 people)
South (district 20)	2 units (48 people)	2 units (48 people)	1 unit (48 people)
East (district 8)	2 units (48 people)	2 units (48 people)	1 unit (48 people)
West (district 5)	2 units (48 people)	2 units (48 people)	1 unit (48 people)
Center (district 6)	2 units (48 people)	2 units (48 people)	1 unit (48 people)
Total	10 units (720 people)	10 units (720 people)	5 units (240 people)

Measuring tools

In this study, there were used two tools for measuring the variables of study and researcher explains them as below:

Social skills rating system invented on 1990 by Garsham and Eliut in USA with 3 separate editions for following levels: (1) kindergarten (3-5 years old), (2) readiness until fifth grade and (3) guidance school (grades 6 to 12).

Garsham and Eliut (1990) normalized social skill rating system for a sample comprising 4170 boys and girls in the age range of 3 to 18 years old with rating 1027 parents and 259 teachers and samples were controlled based on age, gender, race and geographical range. Social skill rating system designed for recognizing the social adequacy and adaptation behavior in 3 ranges: social skills, problematic behavior and education adequacy and one of the points of this scale is that there are several raters (teachers and parents) who can provide a full image of children behavior. It must be mentioned that in this study the social skills are only being considered.

Another test used for evaluating the intelligence in this study is Tehran- Stanford- Bine Intelligence Scale (2009). The Tehran- Stanford Bine intelligence scale is one of the individual tests of intelligence.

Stanford- Bine Intelligence Scale

Along with validity of Stanford- Bine intelligence scale, it is indicated that this scale possesses 5 factors, fluid reasoning, quantitative reasoning, visual, spatial processing and active memory measured in two ranges, verbal and non verbal. Therefore, this scale has content validity. It has also comprises agent or structure validity obtained using analysis method of verification factor. In order for determining the validity coefficients of above mentioned scale, there was used different methods for calculating the validity coefficient including validity coefficients stressing on the internal homogeneity in the field of total intelligence lot from 95% to 98% and for five fold factors from 90% to 92% and for any 10 sub-tests (five fold factors in two ranges verbal and non verbal) from 84% to 89% respectively. Using test- retest validity coefficient, the values are higher than 75%. Using halving method and correction by Spearman- Brown formula, the validity coefficient for total scale points is 98% for non verbal is 98% and for verbal is 96%, and these cases indicate the proper stability. Cases higher than 90% in the range of validity indicates the proper property of psychiatry in the range of internal homogeneity of above test (Gorni, Barbara and Gilman, 2004).

Social skills questionnaire

Along with the validity of above mentioned questionnaire, it is discussed that social skills have been designed in two copies (specialized for trainers and for parents) with three common factors including synergism, stoicism, and adventurism and in addition to three mentioned factors, the copy of trainers enjoys another factor called accountability as well. The copy of trainers also measures the education adequacy as well and additionally there are four factors prepared for any copy; therefore, this questionnaire has content validity. This questionnaire has also structure and factor validity obtained using analysis of acceptance factor. Along with calculation, there are also discussed validity coefficients and this questionnaire has been validated using Kronback alpha method and all

validity coefficients in any four factors and total are higher than 75%. Also, using halving method, test and Spearman Brown correction is higher than 80%.

Result

1. Main hypothesis 1: type of play, stressing on three grades, kindergarten, pre-school and school is effective on social skill of children.

Table 2- multi variable tests related to dependent variables “social skills”

Effect	Multi variable tests	F rate	Significance level
Group	Wilx lambda	8.85	0.001
	Hotling tracing	8.91	0.001
	Maximum root on	8.98	0.001
	Filay tracing	16.55	0.001
Type of play	Wilx lambda	2.24	0.036
	Hotling tracing	2.24	0.037
	Maximum root on	2.24	0.037
	Filay tracing	2.72	0.034
Interaction of group with type of play	Wilx lambda	1.28	0.218
	Hotling tracing	1.29	0.218
	Maximum root on	1.29	0.217
	Filay tracing	2.14	0.047

According to above mentioned table and using multi variable fourfold tests (Filay tracing, Wilx Lmbda, Holting tracing and maximum root on), it was determined that there is significant relation between dependent variables “social skills” and “intelligence” stressing on independent variables of group (kindergarten, pre-school and school) and type of play (parallel, symbolic, social and therapeutic). Therefore, table for testing the effects of inter-group variables (MANOVA- TWO WAY) can be discussed.

Main hypothesis 2: play time, focusing on three grades, kindergarten, pre-school and school is effective on social skill of children.

Table 3- multi variable tests related to dependent variable “social skills”

Effect	Multi variable tests	F rate	Significance level
Group	Wilx lambda	7.55	0.001
	Hotling tracing	7.58	0.001
	Maximum root on	7.61	0.001
	Filay tracing	13.01	0.001
Type of play	Wilx lambda	0.83	0.547
	Hotling tracing	0.82	0.547
	Maximum root on	0.82	0.547
	Filay tracing	1.41	0.236
Interaction of group with type of play	Wilx lambda	1.12	0.333
	Hotling tracing	1.12	0.334
	Maximum root on	1.12	0.334
	Filay tracing	1.58	0.149

According to above mentioned table and using multi variable fourfold tests (Filay tracing, Wilx Lmbda, Holting tracing and maximum root on), it was determined that there is significant relation between dependent variables “social skills” and “intelligence” stressing on independent variables of group (kindergarten, pre-school and school) and platy time (less tan 1h, 1 to 2h, 2-3h and more than 3h). Therefore, table for testing the effects of inter-group variables (MANOVA- TWO WAY) can be discussed.

Main hypothesis 3: type of toy, stressing on three grades kindergarten, pre-school, and school is effective on social skill of children.

Table 4- Multi variable tests related to dependent variables “Social skills”

Effect	Multi variable tests	F rate	Significance level
Group	Wilx lambda	4.98	0.001

Type of play	Hotling tracing	4.99	0.001
	Maximum root on	5	0.001
	Filay tracing	8.01	0.001
	Wilx lambda	3.50	0.002
	Hotling tracing	3.52	0.002
Interaction of group with type of play	Maximum root on	533	0.002
	Filay tracing	6.70	0.002
	Wilx lambda	2.34	0.006
	Hotling tracing	2.35	0.005
	Maximum root on	2.36	0.005
	Filay tracing	4.12	0.001

According to above mentioned table and using multi variable fourfold tests (Filay tracing, Wilx Lmbda, Holting tracing and maximum root on), it was determined that there is significant relation between dependent variables “social skills” and “intelligence” stressing on independent variables of group (kindergarten, pre-school and school) and type of toy (mental, skill, amusement and sports). Therefore, table for testing the effects of inter-group variables (MANOVA- TWO WAY) can be discussed.

Sub-hypothesis 1: type of play, stressing on three grades kindergarten, pre-school, and school is effective on factors making the intelligence of children.

Table 5- Multi variable tests related to dependent variable of factors making the “intelligence”

Effect	Multi variable tests	F rate	Significance level
Group	Wilx lambda	44.26	0.001
	Hotling tracing	49.91	0.001
	Maximum root on	55.73	0.001
	Filay tracing	103.73	0.001
	Wilx lambda	0.82	0.646
Type of play	Hotling tracing	0.82	0.647
	Maximum root on	0.82	0.648
	Filay tracing	1.59	0.159
	Wilx lambda	0.65	0.923
	Hotling tracing	0.65	0.923
Interaction of group with type of play	Maximum root on	0.65	0.924
	Filay tracing	1.90	0.078

2.

According to above mentioned table and using multi variable fourfold tests (Filay tracing, Wilx Lmbda, Holting tracing and maximum root on), it was determined that there is significant relation between dependent variables “social skills” and “intelligence” stressing on independent variables of group (kindergarten, pre-school and school) and type of play (parallel, symbolic, social and therapeutic). Therefore, table for testing the effects of inter-group variables (MANOVA- TWO WAY) can be discussed.

Sub-hypothesis 2: play time, focusing on three grades, kindergarten, pre-school and school is effective on factors making the intelligence of children

Table 6- multi variable tests related to dependent variable of factors making the “intelligence”

Effect	Multi variable tests	F rate	Significance level
Group	Wilx lambda	42.31	0.001
	Hotling tracing	47.39	0.001
	Maximum root on	52.59	0.001
	Filay tracing	97.70	0.001
Type of play	Wilx lambda	0.43	0.968

Interaction of group with type of play	Hotling tracing	0.43	0.968
	Maximum root on	0.43	0.968
	Filay tracing	0.60	0.693
	Wilx lambda	1.14	0.268
	Hotling tracing	1.14	0.266
	Maximum root on	1.14	0.265
	Filay tracing	3.50	0.002

According to above mentioned table and using multi variable fourfold tests (Filay tracing, Wilx Lmbda, Holting tracing and maximum root on), it was determined that there is significant relation between dependent variables “social skills” and “intelligence” stressing on independent variables of group (kindergarten, pre-school and school) and platy time (less than 1h, 1 to 2h, 2-3h and more than 3h). Therefore, table for testing the effects of inter-group variables (MANOVA- TWO WAY) can be discussed.

Sub- hypothesis 3: type of toy, stressing on three grades kindergarten, pre-school, and school is effective on factors making the intelligence of children

Table 7- Multi variable tests related to dependent variables of factors making the “intelligence”

Effect	Multi variable tests	F rate	Significance level
Group	Wilx lambda	38.37	0.001
	Hotling tracing	42.30	0.001
	Maximum root on	46.30	0.001
	Filay tracing	85.29	0.001
Type of play	Wilx lambda	1.83	0.026
	Hotling tracing	1.84	0.025
	Maximum root on	1.84	0.024
	Filay tracing	4.61	0.001
Interaction of group with type of play	Wilx lambda	1.62	0.017
	Hotling tracing	1.63	0.016
	Maximum root on	1.64	0.015
	Filay tracing	5.45	0.001

According to above mentioned table and using multi variable fourfold tests (Filay tracing, Wilx Lmbda, Holting tracing and maximum root on), it was determined that there is significant relation between dependent variables “social skills” and “intelligence” stressing on independent variables of group (kindergarten, pre-school and school) and type of toy (mental, skill, amusement and sports). Therefore, table for testing the effects of inter-group variables (MANOVA- TWO WAY) can be discussed.

Discussion and Conclusion

In modern world, play is a type of internal willing of child and indeed one can say that the content of selected play of children is mostly a reflective of their internal willing. Child tries to reflect his emotional and mental problems in the play and then find a solution for overcoming on them. In his plays, child, as a natural mean, expresses his emotions, fears, and doubts. Expressing the internal states is a tool for real communication of child with external world. By playing, child displays his kindness, anger, stresses, failures, insecurities, disruptions by which attains to a kind of emotional calm (Aryan, 2002).

Play, as a secure tool for children development will empower the muscles, strengthening the bones and promoting the fivefold sense particularly touching and visual sensing. Play provides the children with possibility of experience and direct interactions with environmental factors. Play not only influences on the intellectual and observable behaviors, but also irrevocably influences on physiological structure of his brain.

Play for child equals with studying the adults, a mean for expressing the feelings of children and discovering the relations and fulfilling them, types of play and toys are considered as words and sentences of children. Usually from 2 to 3 years old, children begin playing to each other; but if their intrinsic talent and social interest has been

developed, they may not be adapted to each other and may not be interested in maintaining the social relations and participation in the children play.

Child, by playing and imitating the behavior of adults, not only can exercise his social behaviors, but also it provide him with an opportunity for modifying and developing the behavioral methods of children, particularly their social behavior. In such manner, child can attain the bravery of entering in the society and learns how can live in the community and be responsible for. He also learns different methods for combat and finding a solution for that problem.

Play is very important for making the personality and growth of child. Play is a tool for attaining the valuable experiences by which he can develop emotionally, socially and mentally. Their behavioral models form by play. Such models and patents will be considered as suitable example for him. By play, child can learn abundant, complicated and delicate model of living. He can experience it and examine the relation between such models to learn them. For this reason, it is inevitable he may encounter with in his adulthood and live among other people.

Therefore, during living and playing, child is able to encounter with conflicts and problems make him sad or vulnerable. Play provides the child with the possibility of repeating the situations and stressful conditions in a symbolic framework and causes child to seriously encounter with problems and learns method of resolving the problems and encountering with problems practically and provides the field for mental health and personality and physical health avoiding occurrence of depression.

According to the subject of this study investigating the role and situation of play in the mental development of children, besides types of play, time of play and type of toy, this paper investigated the mental growth of children stressing on two facets, intelligence profile and social skills and using MONOANVA- TWO WAY statistical analysis method, there has been dealt with questions of the study and there have been obtained following findings:

Does type of play, stressing on three grades, kindergarten, pre-school and school influence on the mental development of children (social skill and intelligence)?

By testing the above question, it was determined that there was significant difference between dependent variables, "social skills" and "intelligence", stressing on the group (kindergarten, pre-school and school) in level $\alpha = 0.01$ and pre-school children (with average of 59.82) enjoy social skill more than kindergarten and school children. Also, kindergarten children (with average of 118.2) have higher intelligence lot than pre-school and school children.

There is also significant difference between dependent variable, i.e. "social skills" stressing on type of play (parallel, symbolic, social and therapeutic) in the level $\alpha = 0.05$ and children enjoying therapeutic play (with mean of 59.96) are more than children enjoying the social, symbolic and parallel plays.

There is also significant interaction between independent variables (group and type of play) on dependent variable, i.e. "social skills" in the level of $\alpha = 0.05$ and preliminary school children enjoying therapeutic play (with mean 62.80), enjoy higher social skills than other children.

Does time of play, stressing on three grades, kindergarten, pre-school and school influence on mental development of children (social skill and intelligence)?

By testing the above question, it was determined that there was significant difference between dependent variables, "social skills" and "intelligence", stressing on the group (kindergarten, pre-school and school) in level $\alpha = 0.05$ and pre-school children (with average of 59.82) enjoy social skill more than kindergarten and school children. Also, kindergarten children (with average of 118.2) have higher intelligence lot than pre-school and school children.

Does type of toy, stressing on three grades, kindergarten, pre-school and school influence on mental development of children (social skill and intelligence)?

3. By testing the above question, it was determined that there was significant difference between dependent variables, "social skills" and "intelligence", stressing on the group (kindergarten, pre-school and school) in level $\alpha = 0.05$ and pre-school children (with average of 59.82) enjoy social skill more than kindergarten and school children. Also, kindergarten children (with average of 118.2) have higher intelligence lot than pre-school and school children.

There is also significant difference between dependent variable, i.e. “intelligence” stressing on type of toy (mental, skill, amusement, and sports) in the level $\alpha = 0.01$ and the intelligence of children enjoying mental toys (with mean of 119.2) are more than children enjoying skill, amusement and sports toys.

There is also significant interaction between independent variables (group and type of toy) on dependent variable, i.e. “intelligence” in the level of $\alpha = 0.01$ and preliminary school children who enjoying mental toys (with mean 124.21), enjoy higher intelligence than other children.

Finally by comparing the results of this study with the history of conducted studies in and out of country, such as studies of Islami (2009), on play therapy and cognitive- social development of children; Sadeghi (2009) on play and social development of children; Arya (2008) on play and its influence on mental development of children; Sedaghat (2006) on effects of PC games on aggressiveness of children; Kamal Yaveh (2001) on studying the effects of mental games on concentration and memory of children; Ginot (2008) on group play therapy; Robertson (2007) on selecting the type of toy and its effects on mental development of children; Miski (2005) on studying the relation between types of play and type of toy with mental development (intelligence and creativity); Abraham (2004) on studying the effects of play on mental development of children 3-6 years old and finally, Gilson (2003) on studying the relation between types of plays with cognitive abilities (intelligence and creativity), it was indicated that there is a conformity between our study and studies as mentioned above; because, in all above mentioned studies, it was indicated that play, play therapy and even type of toy result in increased mental and social development of children.

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